

LISTING OF CLAIMS:

Claim 1 (Original) Surface-modified, pyrogenically produced oxides doped by aerosol.

Claim 2 (Previously presented) Surface-modified, pyrogenically produced oxides doped by aerosol, characterized in that the oxides are selected from the group consisting of SiO_2 , Al_2O_3 , TiO_2 , B_2O_3 , ZrO_2 , In_2O_3 , ZnO , Fe_2O_3 , Nb_2O_5 , V_2O_5 , WO_3 , SnO_2 and GeO_2 .

Claim 3 (Currently amended) The surface-modified, pyrogenically produced oxides according to claim 1 or 2, wherein the surface-is modified with one or several compounds selected from the following groups:

a) Organosilanes mixture having the formulas ~~of the type~~ $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$ and $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n-1})$,

$\text{R} = \text{alkyl},$

$n = 1 - 20;$

b) Organosilanes mixture having the formulas ~~of the type~~ $\text{R}'_x (\text{RO})_y \text{Si}(\text{C}_n\text{H}_{2n+1})$ and $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$

$\text{R} = \text{alkyl},$

$\text{R}' = \text{alkyl},$

$\text{R}' = \text{cycloalkyl}$

$$n = 1 - 20,$$

$$x+y = 3,$$

$$x = 1, \text{ or } 2,$$

$$y = 1, \text{ or } 2;$$

c) Halogen organosilanes having the formulas ~~of the type~~ $X_3 \text{ Si}(\text{C}_n\text{H}_{2n+1})$ and $X_3 \text{ Si}(\text{C}_n\text{H}_{2n-1})$

$$X = \text{Cl}, \text{ or } \text{Br},$$

$$n = 1 - 20;$$

d) Halogen organosilanes having the formulas ~~of the type~~ $X_2 (\text{R}') \text{ Si}(\text{C}_n\text{H}_{2n+1})$ and

$$X_2 (\text{R}') \text{ Si}(\text{C}_n\text{H}_{2n-1}),$$

$$X = \text{Cl}, \text{ or } \text{Br}$$

$$\text{R}' = \text{alkyl}$$

$$\text{R}' = \text{cycloalkyl}$$

$$n = 1 - 20;$$

e) Halogen organosilanes having the formulas ~~of the type~~ $X (\text{R}')_2 \text{ Si}(\text{C}_n\text{H}_{2n+1})$ and

$$X (\text{R}')_2 \text{ Si}(\text{C}_n\text{H}_{2n-1}),$$

$$X = \text{Cl}, \text{ or } \text{Br};$$

$$\text{R}' = \text{alkyl}$$

$$\text{R}' = \text{cycloalkyl}$$

$$n = 1 - 20;$$

f) Organosilanes having the formula of the type $(\text{RO})_3\text{Si}(\text{CH}_2)_m\text{-R}'$

$\text{R} = \text{alkyl, or alkyl}$

$m = 0, \text{ or } 1-20,$

$\text{R}' = \text{methyl-, aryl- (e.g., -C}_6\text{H}_5, \text{ substituted phenyl groups,)}$

$-\text{C}_4\text{F}_9, \text{OCF}_2\text{-CHF-CF}_3, -\text{C}_6\text{F}_{13}, -\text{O-CF}_2\text{-CHF}_2,$

$-\text{NH}_2, =\text{N}_3, -\text{SCN}, -\text{CH=CH}_2, -\text{NH-CH}_2\text{-CH}_2\text{-NH}_2,$

$-\text{N-(CH}_2\text{-CH}_2\text{-CH}_2\text{NH}_2)_2,$

$-\text{OOC(CH}_3)_c = \text{CH}_2,$

$-\text{OCH}_2\text{-CH(O)CH}_2,$

$-\text{NH-CO-N-CO- (CH}_2)_5,$

$-\text{NH-COO-CH}_3, -\text{NH-COO-CH}_2\text{-CH}_3, -\text{NH-(CH}_2)_3\text{Si(OR')}_3,$

$-\text{S}_x\text{-(CH}_2)_3\text{Si(OR')}_3,$

$-\text{SH, and or}$

$-\text{NR}'\text{R}''\text{R}''', \text{ wherein } \text{R}' = \text{alkyl, or aryl; } \text{R}'' = \text{H, alkyl, or aryl; and } \text{R}''' = \text{H, alkyl,}$

$\text{aryl, benzyl, or C}_2\text{H}_4\text{NR}'''' \text{ R}'''''' \text{ with } \text{R}'''' = \text{H, or alkyl and}$

$\text{R}'''''' = \text{H, or alkyl;}$

g) Organosilanes having the formula of the type $(\text{R}'')_x (\text{RO})_y \text{Si}(\text{CH}_2)_m\text{-R}'$

$\text{R}'' = \text{alkyl, or cycloalkyl,}$

$x+y = 2,$

$x = 1, \text{ or } 2,$

$y = 1, \text{ or } 2,$

$m = 0.1 \text{ to } 20.0, \text{ or } 1 \text{ to } 20,$

$R' = \text{methyl-}, \text{ aryl-}, -C_6H_5, \text{ substituted phenyl groups},$

$-C_4F_9, -OCF_2-CHF-CF_3, -C_6F_{13}, -O-CF_2-CHF_2,$

$-NH_2, -N_3, SCN, -CH=CH_2, -NH-CH_2-CH_2-NH_2,$

$-N-(CH_2-CH_2-NH_2)_2,$

$-OOC(CH_3)C=CH_2,$

$-OCH_2-CH(O)CH_2,$

$-NH-CO-N-CO-(CH_2)_5,$

$-NH-COO-CH_3, -NH-COO-CH_2-CH_3, -NH-(CH_2)_3Si(OR)_3,$

$-S_x-(CH_2)_3Si(OR)_3,$

$-SH, \text{ and/or}$

$-NR'R''R''', \text{ wherein } R' = \text{alkyl, or aryl; } R'' = H,$

$\text{alkyl, or aryl; and } R''' = H, \text{ alkyl, aryl, benzyl, or}$

$C_2H_4NR''''R''''' \text{ with } R'''' = H, \text{ or alkyl and}$

$R''''' = H, \text{ alkyl} \}$;

h) Halogen organosilanes having the formula ~~of the type~~ $X_3Si(CH_2)_m-R'$

$X = Cl, \text{ or } Br,$

$m = 0, 1 - 20,$

$R' = \text{methyl-}, \text{ aryl-}, -C_6H_5, \text{ substituted phenyl groups}$

$-C_4F_9, -OCF_2-CHF-CF_3, -C_6F_{13}, -O-CF_2-CHF_2,$

$-\text{NH}_2$, $-\text{N}_3$, SCN , $-\text{CH}=\text{CH}_2$, $-\text{NH}-\text{CH}_2-\text{CH}_2-\text{NH}_2$,
 $-\text{N}-(\text{CH}_2-\text{CH}_2-\text{NH}_2)_2$,
 $-\text{OOC}(\text{CH}_3)\text{C}=\text{CH}_2$,
 $-\text{OCH}_2-\text{CH}(\text{O})\text{CH}_2$,
 $-\text{NH}-\text{CO}-\text{N}-\text{CO}-(\text{CH}_2)_5$,
 $-\text{NH}-\text{COO}-\text{CH}_3$, $-\text{NH}-\text{COO}-\text{CH}_2-\text{CH}_3$, $-\text{NH}-(\text{CH}_2)_3\text{Si}(\text{OR})_3$,
 $-\text{S}_x-(\text{CH}_2)_3\text{Si}(\text{OR})_3$, ~~and or~~
 $-\text{SH}$;

i) Halogen organosilanes having the formula of the type $(\text{R})\text{X}_2\text{Si}(\text{CH}_2)_m-\text{R}'$

$\text{X} = \text{Cl}$, or Br ,

R = alkyl such as methyl, - ethyl-, or propyl-,

$m = 0$, or $1 - 20$,

R' = methyl-, aryl-, $-\text{C}_6\text{H}_5$, substituted phenyl groups,

$-\text{C}_4\text{F}_9$, $-\text{OCF}_2-\text{CHF}-\text{CF}_3$, $-\text{C}_6\text{F}_{13}$, $-\text{O}-\text{CF}_2-\text{CHF}_2$,

$-\text{NH}_2$, $-\text{N}_3$, SCN , $-\text{CH}=\text{CH}_2$, $-\text{NH}-\text{CH}_2-\text{CH}_2-\text{NH}_2$,

$-\text{N}-(\text{CH}_2-\text{CH}_2-\text{NH}_2)_2$,

$-\text{OOC}(\text{CH}_3)\text{C}=\text{CH}_2$,

$-\text{OCH}_2-\text{CH}(\text{O})\text{CH}_2$,

$-\text{NH}-\text{CO}-\text{N}-\text{CO}-(\text{CH}_2)_5$,

$-\text{NH}-\text{COO}-\text{CH}_3$, $-\text{NH}-\text{COO}-\text{CH}_2-\text{CH}_3$,

$-\text{NH}-(\text{CH}_2)_3\text{Si}(\text{OR})_3$,

$-\text{S}_x-(\text{CH}_2)_3\text{Si}(\text{OR})_3$, or

$-\text{SH}$;

(j) Halogen organosilanes having the formula of the type $(\text{R})_2\text{X Si}(\text{CH}_2)_m\text{-R}'$

$\text{X} = \text{Cl, or Br,}$

$\text{R} = \text{alkyl,}$

$m = 0, \text{ or } 1 - 20,$

$\text{R}' = \text{methyl-, aryl-, } -\text{C}_6\text{H}_5, \text{ substituted phenyl groups,}$

$-\text{C}_4\text{F}_9, -\text{OCF}_2\text{-CHF-CF}_3, -\text{C}_6\text{F}_{13}, -\text{O-CF}_2\text{-CHF}_2,$

$-\text{NH}_2, -\text{N}_3, \text{SCN}, -\text{CH=CH}_2, -\text{NH-CH}_2\text{-CH}_2\text{-NH}_2,$

$-\text{N-(CH}_2\text{-CH}_2\text{-NH}_2)_2,$

$-\text{OOC (CH}_3\text{)C = CH}_2,$

$-\text{OCH}_2\text{-CH(O) CH}_2,$

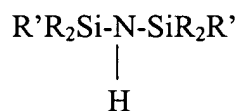
$-\text{NH-CO-N-CO-(CH}_2\text{)}_5,$

$-\text{NH-COO-CH}_3, -\text{NH-COO-CH}_2\text{-CH}_3, -\text{NH-(CH}_2\text{)}_3\text{Si(OR)}_3,$

$-\text{S}_x-(\text{CH}_2)_3\text{Si(OR)}_3$ or

$-\text{SH}$;

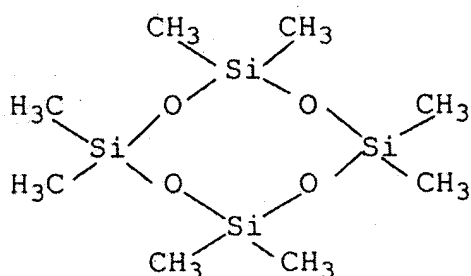
(k) Silazanes having the formula of the type



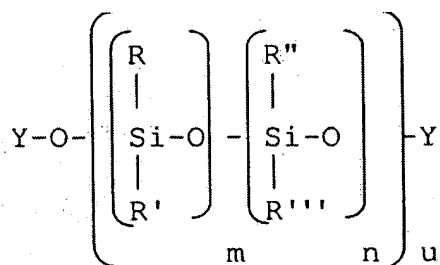
$\text{R} = \text{alkyl,}$

R' = alkyl, or vinyl; or

(l) Cyclic polysiloxanes ~~of the type~~ D 3, D 4 or D 5, where D4 has the formula:



m) Polysiloxanes or silicone oils having the formula ~~of the type~~



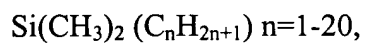
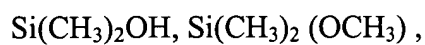
$$m = 0, 1, 2, 3, \dots \infty$$

$$n = 0, 1, 2, 3, \dots \infty$$

$$u = 0, 1, 2, 3, \dots \infty$$

$$Y = CH_3, H, C_nH_{2n+1} \quad n=1-20$$

$$Y = Si(CH_3)_3, Si(CH_3)_2H$$



wherein,

R = alkyl, aryl, $(\text{CH}_2)_n\text{-NH}_2$, or H,

R' = alkyl, aryl, $(\text{CH}_2)_n\text{-NH}_2$, or H,

R'' = alkyl, aryl, $(\text{CH}_2)_n\text{-NH}_2$, or H,

R''' = alkyl, aryl, $(\text{CH}_2)_n\text{-NH}_2$, or H;

Claim 4 (Previously presented) A method of producing the surface-modified oxides in accordance with claim 1 or 2, comprising placing pyrogenically produced oxides doped by aerosol in a suitable mixing container, spraying the oxides under intensive mixing with the surface-modification reagent or a mixture of several surface-modification reagents.

Claim 5 (Previously presented) In a reinforcing filler composition wherein the improvement comprises the surface-modified oxides according to claim 1 or 2 as reinforcing filler.

Claim 6 (Original) The method of claim 4 wherein the spraying step includes spraying with water and/or acid prior to the spraying with the surface-modification reagent or a mixture of several surface-modification reagents.

Claim 7 (Original) The method of claim 4 further comprising re-mixing at 15 to 30 minutes and tempering at a temperature of 100 to 400 °C for a period of 1 to 6 hours.

Claim 8 (Original) The surface-modified, pyrogenically produced oxides according to claim 3 wherein the cyclic polysiloxanes is type D 4.